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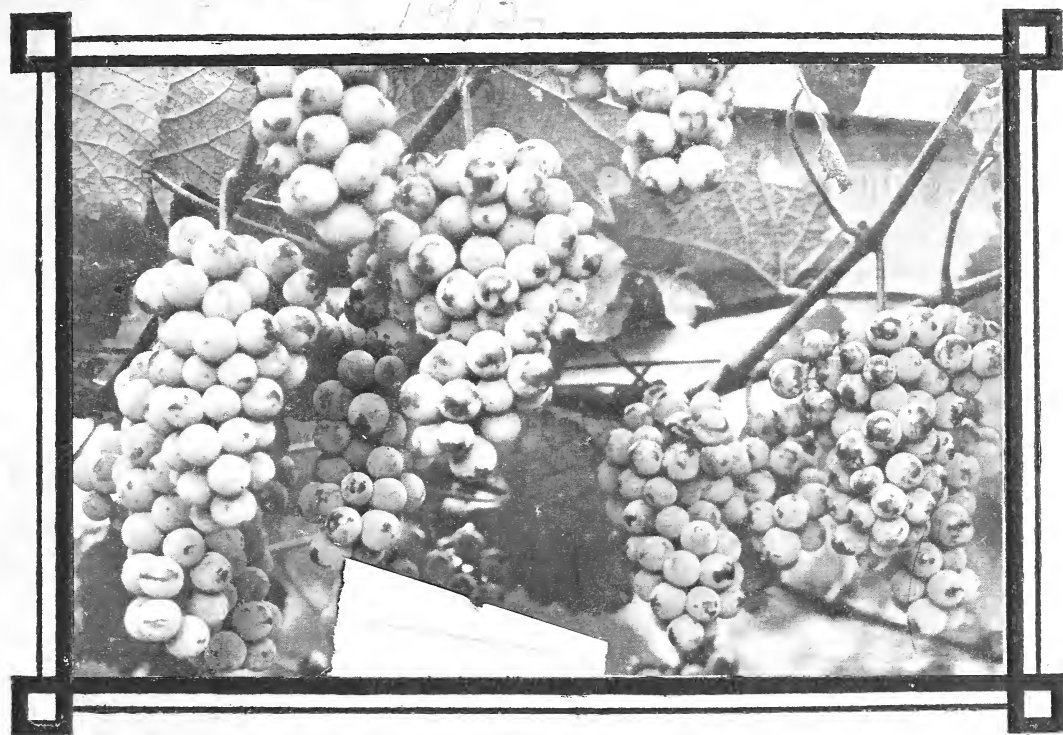
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1915

Admission



T. S. HUBBARD COMPANY
Grape-Vine Specialists
FREDONIA • NEW YORK

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Our long experience in packing and shipping to all parts of the United States, and many foreign countries, enables us to assure our customers the safe arrival of goods.

Number of Plants Required to Plant One Acre

GRAPE-VINES

8 by 6 feet apart	907
8 by 7 feet apart	777
8 by 8 feet apart	680
9 by 8 feet apart	605
9 by 9 feet apart	538
9 by 10 feet apart	484
10 by 8 feet apart	545
10 by 10 feet apart	435

CURRENTS AND GOOSEBERRIES

6 by 3 feet apart	2,420
6 by 4 feet apart	1,815

RASPBERRIES AND BLACKBERRIES

6 by 3 feet apart	2,420
7 by 3 feet apart	2,075

STRAWBERRIES

3 by 1½ feet apart	9,658
3½ by 1½ feet apart	8,260

ESTABLISHED 1866

T. S. HUBBARD COMPANY

Grape - Vine Specialists

FREDONIA, N. Y.

*Growers of American Grapes
for Vineyard and Garden Planting for
Forty-seven years*



THE GRAPE

Longest known and earliest cultivated of all fruits. No garden is complete without them

Introductory



SINCE the last edition of our Catalogue was issued, a few new varieties have been added to our lists, and further experience with others enables us to give more extended and accurate descriptions than were then possible.

We have taken great care to make our descriptions accurate and intelligible, and in the selection of varieties our customers may rely upon what we say as being the result of careful observation and study, as they appear under cultivation here.

We have been engaged in this business here since 1866, and annually grow in our nurseries *over one hundred acres in grape-vines and small fruits*, embracing many millions of plants.

THIS IMMENSE STOCK and the large force of trained assistants in our employ, together with our unequaled facilities for storing, packing and shipping, enable us to fill all orders, large or small, with equal accuracy and promptness.

OUR STANDARD OF GRADING is known throughout the country as the "Fredonia Standard," originated by us, and is synonymous with the highest excellence.

We aim always to keep on hand everything in our special line required by the planter or dealer, and to supply only the best stock at the lowest prices consistent with the quality offered. All who intend planting, and all dealers, will find it to their advantage to submit their lists to us for prices.

We are grateful for the very liberal patronage received during the forty-seven years we have been in business, and we respectfully solicit a continuance of the same.

T. S. Hubbard Company

Fredonia, N. Y.



To Customers

Our Nurseries were established in 1866, and were the first in the United States to make the growing of native American Grape-vines a specialty. In 1887 we incorporated under the laws of New York, and now have a paid-up capital of \$75,000, all of which is invested in our business. From the beginning our specialty has been the growing of Grape-vines, for which we have peculiar natural advantages of soil and climate here on the south shore of Lake Erie. Through our immense business, extending to every state in the Union and to many foreign countries, we have achieved a national reputation for **accuracy in varieties, grading to the highest standard, promptness in filling orders,** and for the **largest stock** and best selected list of varieties in this country.

Acceptance of Orders.—It is mutually understood and agreed between this company and the purchaser that all orders accepted by the company are subject to the following conditions, viz.:

- (1) The company guarantees all stock to be in good, healthy condition at the time and point of shipment.
- (2) It shall not be held liable for loss of, or damage to, stock in transit.
- (3) The purchaser waives all claims and damages against this company resulting from failure to fill orders where delivery is prevented by the loss of the company's stock by fire or the elements, before shipment.

Time of Shipment.—Our facilities for storing, packing and shipping are unsurpassed, and enable us to fill all orders promptly from October 1 to June 1.

Packing is done in the most thorough manner by experienced workmen. We make no charges for boxes, bales or delivering at our freight, express or post office.

Labeling.—Everything we send out is plainly labeled with the best quality of printed or written labels, attached with brass or copper wire.

Substitution of Varieties.—We never substitute unless authorized to do so, but we suggest to our customers that, when ordering, they instruct us to substitute to the best of our judgment, in case any varieties ordered are exhausted.

Guarantee.—We warrant our stock true to name and of quality represented, with the express understanding and agreement that, should any prove not true to name, we will refund the money paid, or will replace it with other stock, but are not liable to damages other than herein named.

Correspondence.—Write us for advice about the best varieties for your locality for table use, market or wine. If you want to cover an arbor, screen or any unsightly place, let us tell you what to plant. We can give you valuable information, and gladly place our experience at your command.



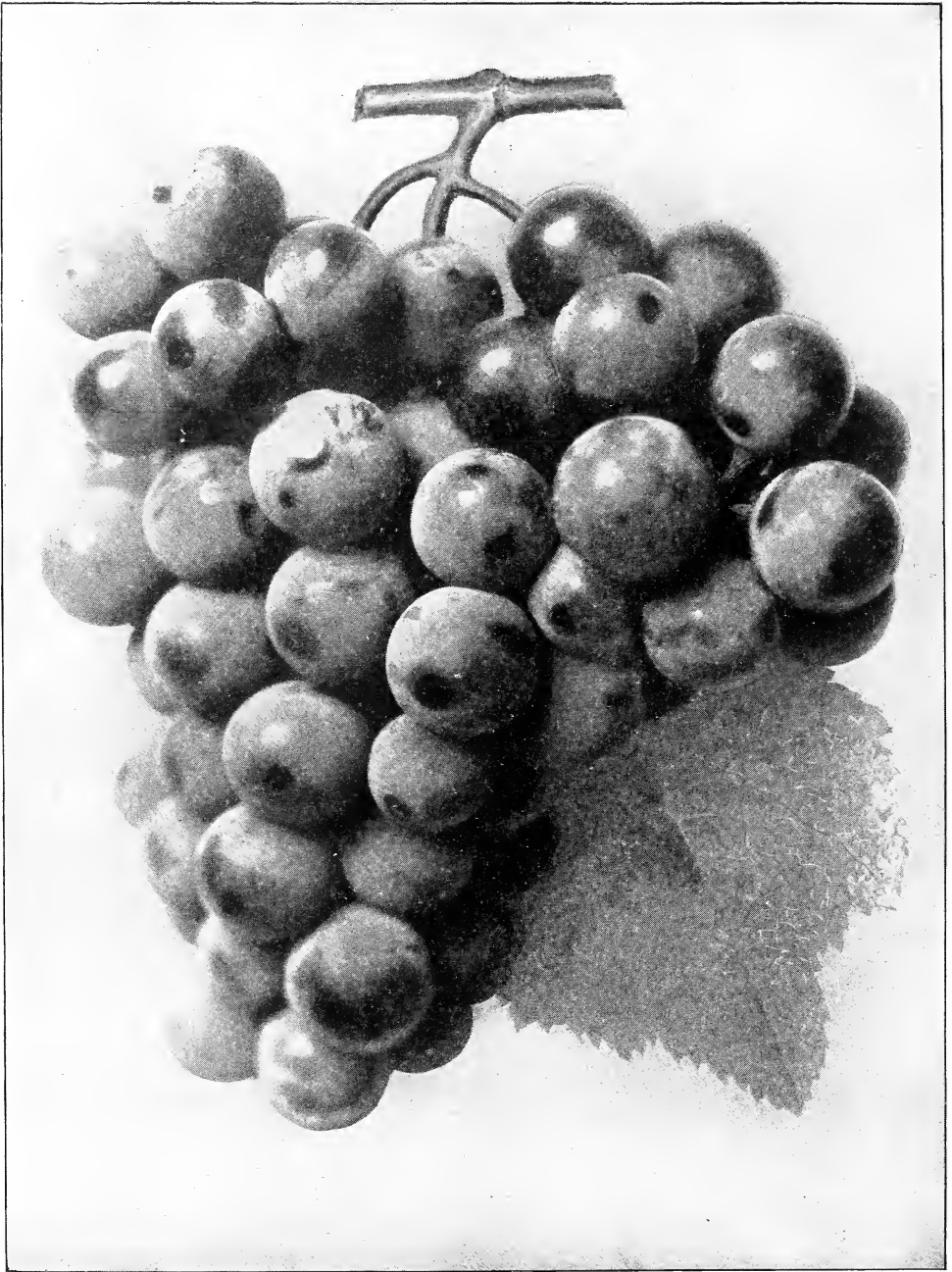
Table of Comparative Merits

In order to more accurately show the comparative merits of different varieties on leading points, the following table has been prepared. On each point as indicated by the respective headings, ten different grades are given, "1" indicating the lowest grade, and "10" the highest and most favorable grade, the intermediate numbers indicating the approach to highest or lowest.

The ratings given below are based on our own personal observation, and show the average merits of the different varieties as they appear when grown under the conditions of soil and climate existing in what is known as the "Grape Belt" on the south shore of Lake Erie. They are, of course, likely to vary under other and dissimilar conditions, but may be safely used as a basis of selection for varieties to plant in most localities east of the Rocky Mountains.

VARIETY	Size of Berry 1 smallest, 10 largest	Size of Cluster 1 lightest, 10 heaviest	Quality for Table Use 1 poorest, 10 best	Earliness in Ripening 1 latest, 10 earliest	Hardiness of Bud and Cane 1 tenderest, 10 hardest	Health of Foliage 1 fair, 10 best	Vigor of Growth 1 poorest, 10 best	Productiveness 1 poorest, 10 best	Shipping Quality 1 poorest, 10 best	Keeping Quality 1 poorest, 10 best	Compactness of Cluster 1 least, 10 most
Agawam.....	8	7	8	5	7	3	9	6	10	10	4
Aminia (Rogers' No. 39)...	8	8	9	8	7	7	8	7	9	8	8
Amber Queen.....	6	3	9	6	6	3	3	2	5	7	6
Barry.....	8	8	9	7	7	7	6	7	9	9	8
Brighton.....	6	8	10	8	7	3	8	5	2	5	6
Brilliant.....	6	8	10	6	7	3	3	5	5	7	9
Campbell's Early.....	9	8	6	6	7	9	8	8	10	9	8
Catawba.....	7	7	9	3	8	7	7	8	10	10	6
Champion.....	7	7	2	9	9	10	10	10	8	5	8
Concord.....	8	8	7	6	9	10	10	10	8	6	6
Clinton.....	4	4	2	3	10	10	10	9	9	8	9
Cynthiana.....	2	5	4	2	9	10	10	7	9	7	8
Delaware.....	4	4	10	6	8	2	4	8	8	8	9
Diamond.....	7	7	8	8	8	9	9	8	4	5	9
Diana.....	6	5	9	4	7	7	7	6	10	10	10
Duchess.....	5	5	10	3	6	5	5	4	9	9	8
Early Ohio.....	6	5	5	9	8	8	6	6	8	6	6
Early Victor.....	5	4	4	8	8	9	9	8	5	5	9
Eaton.....	10	9	5	6	9	9	7	5	5	3	6
Elvira.....	6	5	2	3	9	10	10	8	8	7	10
Empire.....	5	6	9	5	7	7	5	5	7	9	7
Eumelan.....	6	5	10	4	4	2	2	4	9	8	8
Green's Early.....	7	5	8	10	8	8	6	6	8	4	5
Goethe.....	9	6	5	3	4	5	3	4	8	7	3
Green Mountain.....	3	5	10	10	9	9	8	8	6	6	6

Continued on page 7



Concord (see page 10). The standard market Grape of America



Table of Comparative Merits, continued

VARIETY	Size of Berry 1 smallest, 10 largest	Size of Cluster 1 lightest, 10 heaviest	Quality for Table Use 1 poorest, 10 best	Earliness in Ripening 1 latest, 10 earliest	Hardiness of Bud and Cane 1 tenderest, 10 hardest	Health of Foliage 1 fair, 10 best	Vigor of Growth 1 poorest, 10 best	Productiveness 1 poorest, 10 best	Shipping Quality 1 poorest, 10 best	Keeping Quality 1 poorest, 10 best	Compactness of Cluster 1 least, 10 most
Hartford.....	7	5	5	8	8	8	8	8	6	4	6
Herbert (Rogers' No. 44) ..	8	8	8	6	7	7	7	7	9	9	7
Herman Jaeger.....	5	9	7	2	8	10	10	9	8	8	8
Iona.....	7	7	10	3	4	4	3	7	8	8	4
Isabella.....	7	6	8	3	4	5	8	8	10	9	8
Ives.....	6	5	3	8	8	10	9	8	10	7	8
Janesville.....	7	5	2	4	10	10	10	9	9	5	9
Jefferson.....	7	8	10	3	5	7	4	6	10	10	9
Jessica.....	3	2	9	10	8	5	4	5	6	6	6
Lady.....	8	5	6	9	8	9	5	3	2	2	7
Lady Washington.....	7	9	5	2	5	6	5	6	7	7	5
Lindley.....	8	5	9	8	7	7	9	4	9	9	5
Lucile.....	7	7	3	6	9	8	8	10	9	5	9
Lutie.....	8	5	3	10	10	10	9	8	7	5	8
Massasoit.....	9	6	8	8	7	5	8	3	5	5	2
Martha.....	6	5	7	6	9	9	7	5	4	5	5
McPike.....	10	7	5	8	9	9	7	5	2	3	6
Merrimac.....	9	8	9	5	7	5	7	4	9	9	7
Missouri Reisling.....	6	4	2	3	9	9	10	8	7	6	6
Moore's Early.....	9	8	6	9	9	10	7	7	7	5	8
Moyer.....	4	1	7	9	8	7	5	2	8	8	7
Norton.....	2	5	4	2	9	10	10	7	7	7	8
Niagara.....	9	10	9	6	7	6	9	10	8	7	8
Perkins.....	6	6	1	7	8	9	9	8	7	6	7
Pocklington.....	9	8	5	5	9	9	7	8	8	6	10
Poughkeepsie Red.....	3	3	10	5	5	1	1	4	5	8	8
Prentiss.....	6	5	10	3	5	4	3	6	8	9	9
Salem.....	8	6	10	5	6	3	5	6	6	8	8
Telegraph.....	6	6	3	6	9	10	9	9	8	5	10
Triumph.....	8	10	5	1	5	6	4	6	7	6	9
Ulster Prolific.....	6	4	10	5	8	7	4	7	9	9	9
Vergennes.....	8	7	10	5	7	6	8	7	10	10	8
Victoria.....	8	7	8	6	9	9	6	3	4	4	7
Wilder.....	9	8	9	5	7	5	7	7	9	9	7
Worden.....	9	9	8	8	9	9	9	9	4	4	7
Woodruff Red.....	8	7	3	5	9	10	9	8	4	4	10
Wyoming Red.....	5	4	4	8	9	8	9	6	10	7	6



DESCRIPTION OF VARIETIES

In our descriptions of varieties we have not given date of ripening. It would be impossible to do so, except for a very limited section of country, the date varying with the latitude and longitude of the location, and often to a lesser degree with the soil and exposure of the vineyard. We have therefore chosen some of the leading well-known sorts for comparison, and have given the time of ripening, as compared with one of those ripening about the same time in this



Grape-Vines planted along the garden walk



A pretty Grape arch

locality. Thus, we use Moore's Early as indicating one of the earliest to ripen, Concord or Delaware midseason, and Catawba late. By bearing this in mind our readers will be able to fix the time of ripening of most varieties we describe.

It should also be borne in mind that variations in soil and climate, and other conditions of environment, often cause great variations in the characteristics of all plants. Grapes are no exception.

In selecting varieties for planting, it is well to plant largely of those which are known to succeed in the locality, and the new or lesser known varieties more sparingly, until they have been tested and found to be desirable. Nearly all of the hardy varieties do well in all locations.



COMPARISON OF VARIETIES

On pages 5 and 7 will be found a carefully prepared table showing the comparative merits of 62 varieties of Grapes arranged on a definite scale of points.

Varieties of Grapes

Agawam (Rogers' Hybrid No. 15). Red or maroon. Bunch usually loose, shouldered; berries large; skin thick; flesh pulpy, meaty, juicy, of a rich peculiar aromatic flavor; ripens about with Concord; a good keeper. Vine a strong, rank grower, hardy and productive; should be pruned, leaving long canes. One of the best of Rogers' hybrids.

Aminia (Rogers' No. 39). Black. Bunch and berry large; skin thick; flesh tender; very early, ripening about the same time as Worden; quality good. Vine a strong grower, healthy, hardy and productive.

Bacchus. Black. Bunch medium; berry small, round, juicy, sprightly. A seedling of Clinton, which it resembles but is of much better quality. A valuable wine Grape.

Barry (Rogers' Hybrid No. 43). Black. Bunch very large, compact, shouldered; berries large; flesh tender sweet, good. Vine vigorous, hardy and healthy. Ripens about with Concord.

Brighton. Red. Bunch medium to large, long, compact, shouldered; berries medium; skin thin; flesh tender, sweet, with scarcely any pulp; quality best. Vine a vigorous grower, healthy, hardy and productive; one of the best early red Grapes. The flowers have reflexed stamens and do not always fertilize fully unless planted with Concord, Worden or others which blossom at the same time. Ripens with Delaware.

Brilliant. Red. Bunch large, long, sometimes shouldered; berry medium to large; skin thin, tough,

brilliant in color; quality good to best. Vine a strong grower, hardy, healthy and productive. Ripens about the same time as Delaware.

Campbell's Early. Black. Bunch large, shouldered, moderately compact; berry large, nearly round, slightly elongated, covered with profuse light blue bloom; adheres strongly to stem; skin thick, tough and does not crack;



Brighton Grapes

T. S. Hubbard Company

flesh somewhat pulpy, sweet, with slight aroma, not foxy; quality about same as Concord. It colors very early but requires some weeks after coloring to fully ripen; a fine shipping Grape. Vine a good grower.

Catawba. Dark red when fully ripe. Bunch large, moderately compact, shouldered; berries medium to large; skin thick, tough; flesh somewhat pulpy, with rich vinous flavor; of best quality for both table and wine. Vine a good grower, hardy, with healthy foliage; very productive and profitable where it succeeds and matures well. Ripens too late for high latitudes.

Champion, or Talman. Black. Bunch

medium to large, compact; berries medium, adhering to stem better than Hartford, which it resembles; skin thick; flesh sweet, juicy, somewhat pulpy, with foxy flavor. Vine a very rank vigorous grower; hardy, very healthy and productive. Ripens about with or a little before Moore's Early. Quality poor, but desirable for early market.

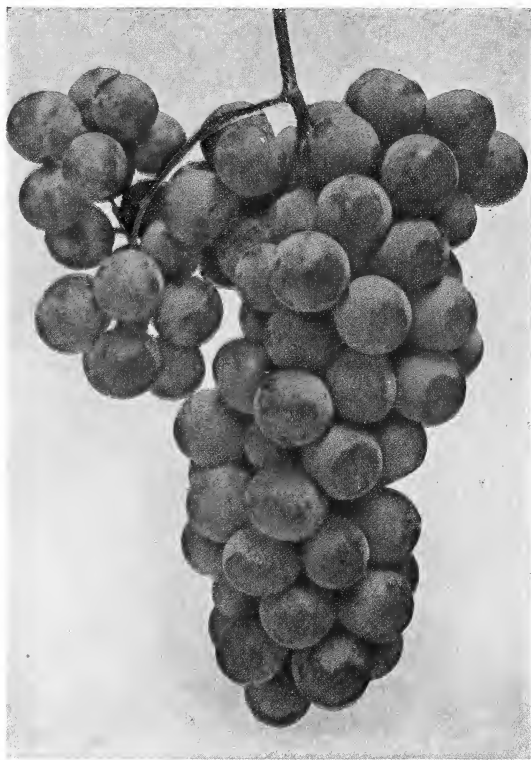
Clinton. Black. Bunch small to medium, compact, long, not usually shouldered; berries small; skin thin, but tough; flesh juicy, spicy, with little pulp, quite acid; is used principally for wine. Vine very vigorous, healthy, hardy, and productive. Requires plenty of room, and spur-pruning on old canes for best results.

Concord. Black. Decidedly the most popular Grape in America, and deservedly so. Adapts itself to varying conditions and is grown with more or less profit in every grape-growing state in the Union. Bunch large, shouldered, compact; berries large, covered with a rich bloom; skin tender, but sufficiently firm to carry well to distant markets; flesh juicy, sweet, pulpy, tender. Vine a strong grower, very hardy, healthy and productive. For general cultivation the most reliable and profitable variety.

Cottage. Black. A seedling of Concord, and very similar in growth, size and quality, but ripens a few days earlier, about with Moore's Early. Variable as to productiveness and sometimes drops its berries.

Cynthiana. A black wine Grape. Bunch medium, long, shouldered, compact; berries small. Vine a vigorous grower and healthy; fruit ripens late. Highly esteemed in the South and Southwest, where it is considered one of the best red wine Grapes; strongly resembles Norton.

Delaware. Red. Bunch small, compact, sometimes shouldered; berries small; skin thin, but firm; flesh juicy, very sweet and refreshing, of best quality for both table and wine; ripens with Concord or a little before. Vine hardy, productive, a moderate grower; requires rich soil and



Delaware Grapes

Grape Vine Specialists



Grape-Vines used as a screen

good culture. Is regarded by many as the best American Grape, all things considered. It should be in every garden and vineyard.

Diamond. White. Bunch large, compact, shouldered; berries large, round; skin thin, but tough; flesh tender, juicy, with but little pulp. Vine a good grower, with thick, healthy foliage; hardy and productive; of fine quality. Ripens a little before Concord.

Diana. Red. Bunch medium, very compact; berries medium; skin thick and very tough; flesh sweet, tender, vinous, with a peculiar musky flavor; of good quality for both table and wine. Vine vigorous and productive.

Dracut Amber. Red. Very early; bunch and berry large; flesh quite foxy. Vine hardy very vigorous and productive. Valuable in high latitudes where better varieties will not ripen.

Duchess. White. Bunch medium to large, long, compact, shouldered; berries medium, quality best; ripens a little later than Concord. Vine a good grower and productive. Its quality is so fine that considerable trouble in growing it will pay. Keeps a long time after being gathered.

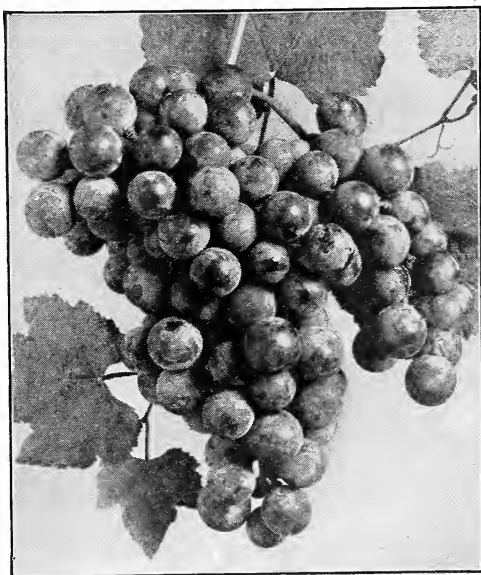
Early Ohio. Black. Bunch medium to large, compact, often shouldered; berries medium, quality fair; ripens about with Moore's

Early or a little before under favorable conditions. Vine healthy, hardy and productive. A sure and regular bearer.

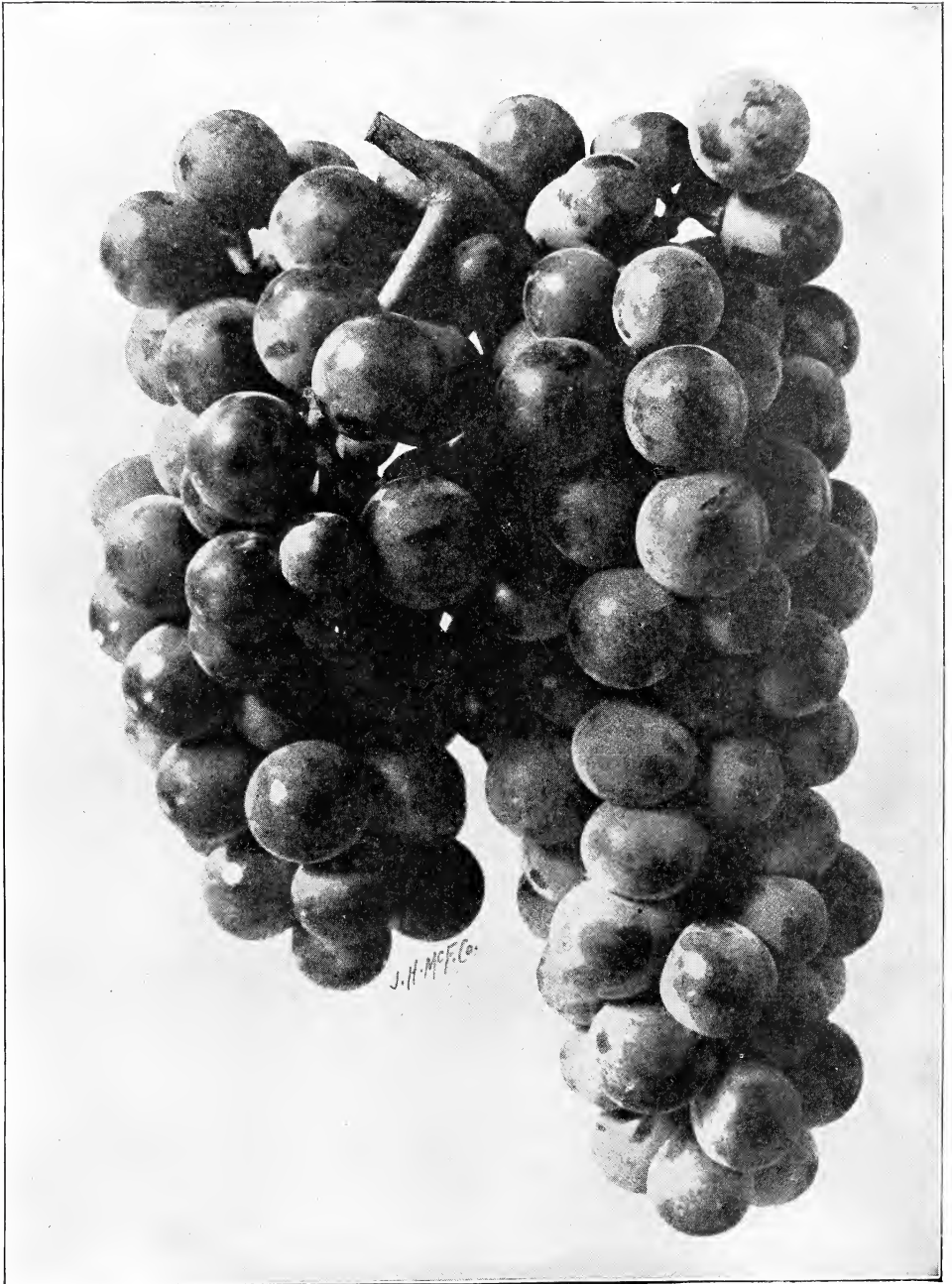
Early Victor. Black. Bunch medium, compact; berry medium; flesh tender and sweet. Vine a strong grower, very healthy, hardy and productive. Ripens about with Concord; in foliage, growth and cluster resembles Telegraph. Quality only fair.

Eaton. Black. Similar in foliage to Concord. In growth, health, hardiness of vine, and in every other respect its equal, while in size of bunch and berry it is

much larger and more attractive. Leaf large, thick, leathery, covered on the under side with a thick, brownish yellow down. Bunch



Catawba Grapes (see page 10)



Campbell's Early Grapes (see page 9)

Grape & Pine Specialists

very large, compact, double-shouldered; berries very large, many one inch in diameter, round, black, covered with a heavy blue bloom, adheres firmly to the stem; skin thin, but tough; pulp tender, separating freely from the seeds and dissolving easily in the mouth; very juicy. Ripens with Concord or a little earlier.

Elvira. White. Bunch and berry medium, very compact. Vine a vigorous, strong, healthy grower and very productive, often growing four or five clusters on a single cane; very hardy. Ripens late, about with Catawba. A valuable white wine Grape.

Empire State. White. Bunch medium, long, compact; berries medium, quality best. Vine a strong grower, hardy, with large, healthy foliage and short-jointed canes which ripen early. Superior in quality to Niagara, but not usually so productive.

Etta. White. A seedling of Elvira, but larger in berry and of better quality.

Eumelan. Black. Bunch medium, shouldered, compact; berries medium, round, adhering firmly to the stem; flesh tender, melting, rich and vinous; ripens a little before Concord. Vine vigorous, very short-jointed, hardy and productive. A superior red wine Grape.

Gærtner (Rogers' No. 14). Red. Bunch and berry medium to large; skin thin and of a beautiful bright red color; flesh sweet, rich, aromatic. Vine healthy and productive. This is one of the best and most showy of the red Grapes.

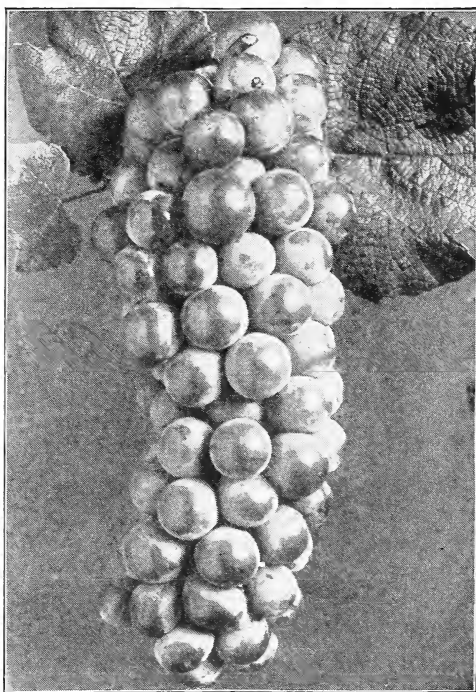
Goethe (Rogers' No. 1). Bunch usually large, shouldered, compact; berries large, oval, yellowish green, tinged with red on one side, amber-colored when fully ripe; skin thin but firm; flesh sweet, juicy, with high aromatic flavor. Vine strong and very productive. One of the best keepers and of best quality for both table and wine. Esteemed highly both West and South; rather late for northern localities, and yet ripens about with Catawba. It is quite good if not fully ripe.

Green's Early. A new white Grape. A chance seedling of Concord type. Bunch and berry medium to large; sweet; ripens very early, before Moore's Early.

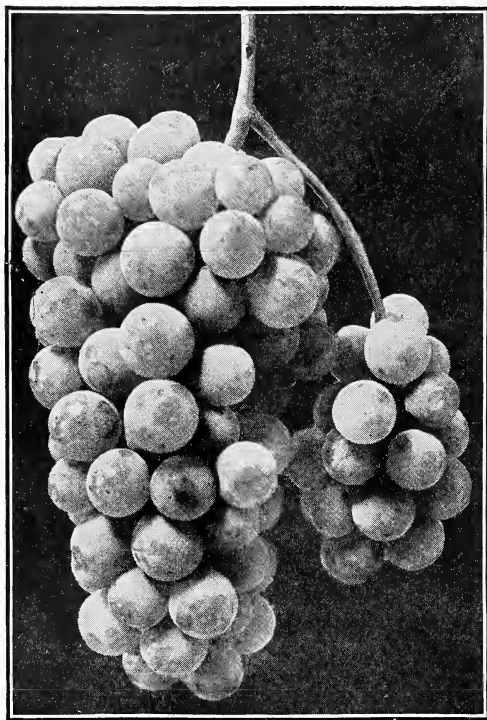
Green Mountain. Same as Winchell; white. Bunch medium to large, shouldered; berries medium, greenish white; skin thin, tough; pulp tender, sweet, with few seeds; of excellent quality, free from foxiness; very early. Vine vigorous, healthy, hardy and very productive. A fine Grape, identical in every way with Winchell.

Hartford. Black. Bunch large, shouldered; berries large, inclined to drop from bunch if allowed to hang until fully ripe; flesh sweet, pulpy, somewhat foxy. Vine hardy, vigorous, healthy and productive. Ripens four to six days before Concord.

Hayes, Francis B. White, with yellowish tinge when fully ripe; bunch and berry medium; skin thin, flesh tender, juicy, of medium quality. Vine a fair grower, hardy; foliage healthy. Ripens about with Hartford.



Empire State Grapes



Green Mountain Grapes (see page 13)

Herbert (Rogers' No. 44). Black. Bunch and berry large; flesh sweet, rich and sprightly. Vine a good grower, hardy and productive. Early and of fine quality for market.

Herman Jaeger. Dark purple, nearly black. Bunch very large, compact, shouldered; berry medium, quality very good; ripens about with Concord. Vine very vigorous, hardy, healthy and productive. One of Munson's seedlings.

Iona. Pale red. Bunch large, long, shouldered; rather loose; berries medium; skin thin, firm; flesh tender, with rich vinous flavor; of very best quality for table or wine. Vine only a moderate grower, requiring rich soil and high culture; short-jointed and inclined to overbear, requiring short pruning and thinning of fruit. Ripens a little before Catawba.

Isabella. Black. Bunch large, shouldered, compact; berries large, oval, of fair quality. Vine vigorous, but not very hardy. Ripens late and irregularly.

Ives. Black. Bunch long, medium to large, compact; berries medium; skin thick and tough; flesh sweet, pulpy, somewhat foxy; colors early but does not fully mature until several weeks later. When ripe it is a good market variety, and is highly esteemed for red wine. Vine hardy, very vigorous and healthy, generally succeeding well; is quite exempt from rot. A good shipper.

Janesville. A very hardy black Grape. Bunch medium, very compact; berry medium; skin thick; flesh pulpy, acid, of medium quality. Very strong, rank grower, and very productive. Desirable only in severe climates where better varieties will not succeed. Colors very early, but improves by hanging some weeks longer on the vines.

Jefferson. Bright red. Bunch large, double shouldered; berry medium to large; skin thick; flesh tender, crisp, juicy, sweet, slightly aromatic, vinous. It is of very best quality, a fine keeper and good market Grape. Ripens with Catawba or a little later.

Jessica. White. Cluster and berry quite small; very sweet and pleasant. Vine a fair grower, hardy and productive. Ripens ten days or two weeks before Concord. Recommended only for garden culture.

Lady. White. Bunch medium, compact; berries large; skin thin. Vine only a moderate grower, but perfectly healthy and hardy, with Concord foliage, moderately productive, good, though not of best quality. Ripens very early; should be planted on rich land and given high culture.

Lady Washington. A late white Grape. Bunch very large, compact, double-shouldered; berries large, yellowish green, with thin white bloom; flesh tender, sweet, juicy. Vine vigorous, with large foliage. Ripens rather late for our latitude, but succeeds well in many localities in the South and Southwest.

Lindley (Rogers' No. 9). Red. Bunch medium, long, not usually shouldered; berries large; flesh tender, sweet, with high aromatic



Eaton Grapes (see page 11)



Lindley Grapes (see page 14)

Grape Vine Specialists

flavor, of best quality; a good keeper, with firm, tough skin; ripens with Delaware. Vine healthy, vigorous and hardy. One of the best of Rogers' hybrids. It succeeds well in some parts of the South. Requires long pruning and not too rich soil.

Lucile. Red. Bunch and berry medium to large; skin thin, but tough, bright color. Good shipper; flesh pulpy; quality fair, foxy. Exceedingly productive.

Lutie. Dark red. Bunch and berry medium to large; skin tough and thick; flesh pulpy, sweet and quite foxy; quality only fair. Vine hardy, vigorous and productive. It sells well as an early red Grape, ripening about with Moore's Early.

Martha. White, sometimes turning pale yellow when fully ripe. Bunch medium, compact, shouldered; berries medium; skin thin, tender; flesh very sweet; quality good as Concord. Vine healthy and hardy, similar to Concord in appearance and habit, although not quite so strong a grower. Ripens with Concord.

Massasoit (Rogers' No. 3). Red. Bunch large, compact, shouldered; berries large; skin thin, very tender; flesh tender, sweet, without pulp, delicious, with agreeable aroma; very early. Vine vigorous, healthy, hardy and moderately productive. One of the earliest of the Rogers' varieties.

McPike. A seedling of Worden, which it resembles in color, quality and time of ripening. Bunch large; berries very large, an inch or more in diameter; too large and soft for distant markets. Similar in fruit and growth of vine to Eaton.

Merrimac (Rogers' No. 19). Black. Bunch very large, shouldered, compact; berries large; flesh sweet, tender, good. Vine a good grower, hardy and productive. It strongly resembles Wilder (Rogers' No. 4).

Missouri Reisling. Greenish white, becoming pale red when fully ripe. Bunch medium, compact; berry medium; flesh tender, juicy and sweet; makes a white wine of high quality. Vine hardy, healthy and very productive. Ripens a little later than the Catawba.

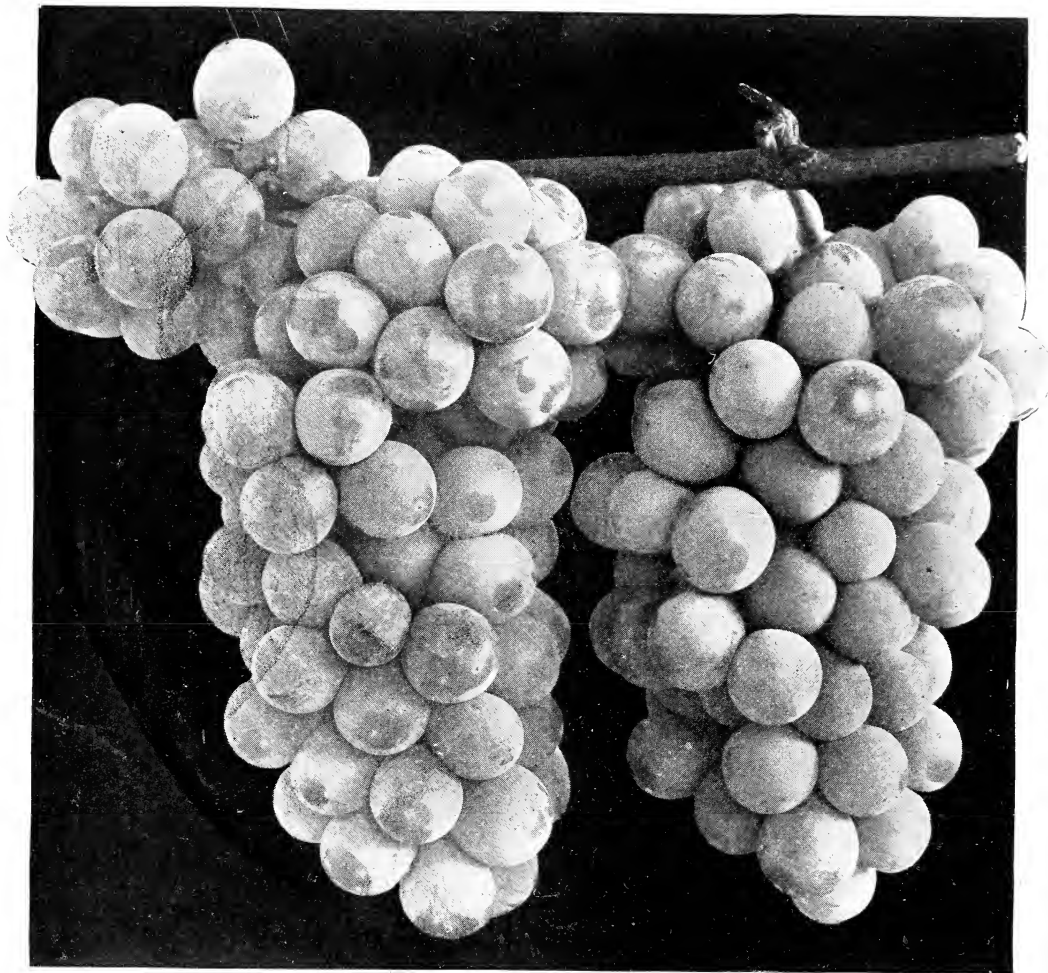
Moore's Early. Black. Bunch rarely shouldered, not quite so large as Concord;

berries larger and very much like it in flavor and quality. Vine a moderate grower, very healthy and hardy; foliage thick, leathery, somewhat resembling Concord, except on the under side, which is covered with a yellowish brown down. Produces a fair and, with high cultivation, a heavy crop. Ripens so early as to be nearly out of market before the popular Concord is ripe and is, therefore, a very desirable early market variety. Succeeds best on rich soil.

Moyer. A red Grape that originated in Canada. It resembles Delaware in foliage, habit of growth, appearance and quality of fruit, but is more vigorous in growth. The clusters, however, are quite small and sometimes imperfect; berries a little larger than Delaware. Ripens about with Moore's Early, and is chiefly valuable for its earliness.



Vergennes Grapes (see page 19)



Niagara Grapes

Niagara. White. Bunch very large and handsome, often shouldered, compact; berries large, round; skin thin, tough, does not crack, and carries well; has not much pulp when fully ripe; melting, sweet, with a flavor and aroma peculiarly its own, and agreeable to most tastes; ripens with Concord, sometimes a little earlier. Vine very vigorous and productive,

succeeding well both North and South; is very largely planted by vineyardists.

Norton (Norton's Virginia). Black. Bunch long, compact, shouldered; berries small; flesh tender, melting, without pulp, and vinous; ripens too late for many northern localities, but is very highly esteemed in the South and Southwest, and considered one of the best and

Grape Vine Specialists

most reliable red wine Grapes. Vine a healthy, vigorous grower, hardy and productive.

Perkins. Pale red when fully ripe. Bunch medium to large, shouldered, compact; berries medium; skin thick; flesh sweet, juicy, but foxy; ripens early, before Concord. Vine very vigorous, hardy, healthy and productive.

Pocklington. Pale green, usually with tinge of golden yellow where exposed to the sun. Bunch large, very compact; berries very large, covered with a beautiful white bloom; flesh juicy, sweet, with considerable pulp. Foliage large, leathery, healthy. Vine a moderately good grower, but very healthy and very hardy. It produces a heavy crop of fine showy clusters.

Poughkeepsie Red. An early red Grape of superior quality, somewhat resembling Delaware, but with longer and more shouldered clusters. Vine a weak grower and not very healthy. Has fruited finely with us, but we would recommend it only for amateurs.

Prentiss. Yellowish green, often with a rosy tint on side next the sun. Bunch medium to large; compact, not shouldered; berries medium to large; skin thin, but very firm; flesh tender, sweet, melting, with very little pulp, juicy.

Salem. Dark red. Bunch large, compact, shouldered; berries large, round; skin thick and firm; flesh very sweet, tender, with a rich aromatic flavor. Vine vigorous, hardy, healthy. Ripens earlier than Concord when thinned properly. A splendid keeper, good shipper and of best quality for both table and wine.

Telegraph. Black. Bunch medium to large, compact, sometimes shouldered; berries medium; flesh sweet, juicy, with some pulp; quality fair; ripens early, before Concord. Vine healthy, hardy, very vigorous and productive.

Ulster Prolific. A red Grape of best quality. Bunch medium, not shouldered, compact; berries medium to large; skin thick and tough; ripens soon after Concord and keeps well. Vine a fair grower, hardy, healthy and productive.

Vergennes. A dark red Grape from Vermont. Bunch medium to large, not often shouldered, compact; berries large; skin very thick and firm; flesh sweet, juicy, with some pulp; quality best. Vine a vigorous grower, hardy, healthy, productive; inclined to overbear and should be thinned; ripens with Concord. An excellent shipper and keeper; profitable market variety.

Wilder (Rogers' No. 4). Black. Bunch large, shouldered; berries large, skin thick and firm; flesh sweet, tender, with sprightly, pleasant flavor; a good keeper; ripens early or about with Concord. Vine a moderate grower, hardy, healthy and productive; popular for market.



Moore's Early Grapes (see page 17)



Worden Grapes

Woodruff Red. A red Grape that originated in Michigan. Bunch medium to large, short, compact; berry large; skin thick, of a beautiful bright red color, very handsome and attractive, making it a profitable market variety. Vine very vigorous, hardy, healthy and unusually productive. The fruit is of good quality though somewhat foxy; ripens about with Concord.

Worden. Black. Bunch large, sometimes shouldered, compact; berries very large; skin thin. Superior to the Concord in the following points: It is better in quality, has a larger berry, a more compact and handsome cluster, and ripens five to ten days earlier. It fully equals Concord in vigor, health and productiveness. In berry it is about the size of Moore's

Grape & Pine Specialists

Early, but of better quality, more vigorous and productive, and ripens but little later. We recommend it strongly. It is perhaps not quite so good a shipper as Concord, but ships satisfactorily from western New York to the principal cities east and west.

Wyoming Red. A very early red Grape. Bunch small, compact and handsome; berry small to medium; skin bright red, thick, firm; fruit sweet, somewhat foxy, but agreeable to most tastes. Vine a very strong grower, very hardy and healthy; foliage small, thick and leathery. Its chief points of merit are its health and earliness. Should be pruned with long canes and given plenty of room, to secure good clusters and a good crop. When pruned close, it is apt to set imperfect clusters.

Varieties Recommended Only for Amateur Planting or for Special Purposes

The following list includes new and not sufficiently tested varieties, and those which are valuable only for special purposes, or in certain localities

Amber Queen. Red. Bunch and berry medium to large, of fine quality; vine unhealthy, clusters often imperfect. Not recommended.

Berckmans. Red. Bunch and berry medium; quality very good; ripens about with Worden. A good amateur variety.

Beta. Bunch good size; compact; shouldered. Berry medium; skin thin and rather tough; pulp separates easily from seeds. Ripens early; fair quality; very hardy. Recommended for planting in the Northwestern States.

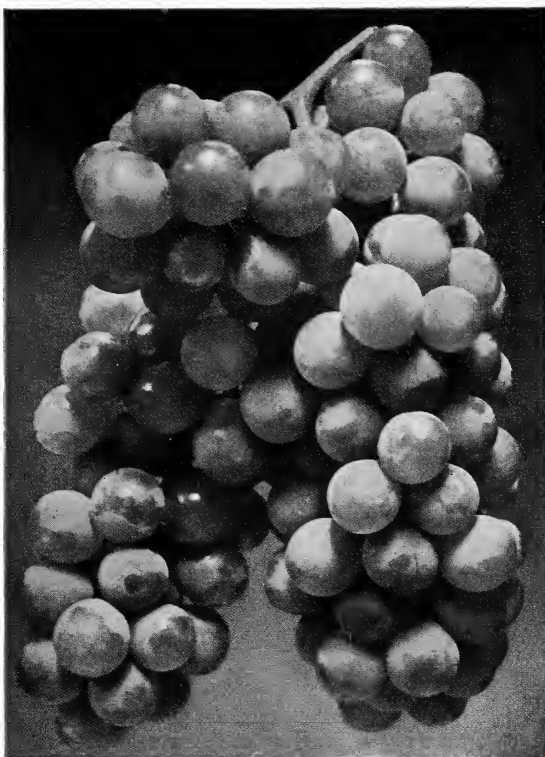
Colerain. White. Bunch and berry medium; skin thin and tender; flesh sweet, of good quality; ripens a little before Concord. Vine a good grower and productive.

Columbian. A large, showy, reddish black Grape. Strong, healthy grower. Quality inferior and clusters uneven.

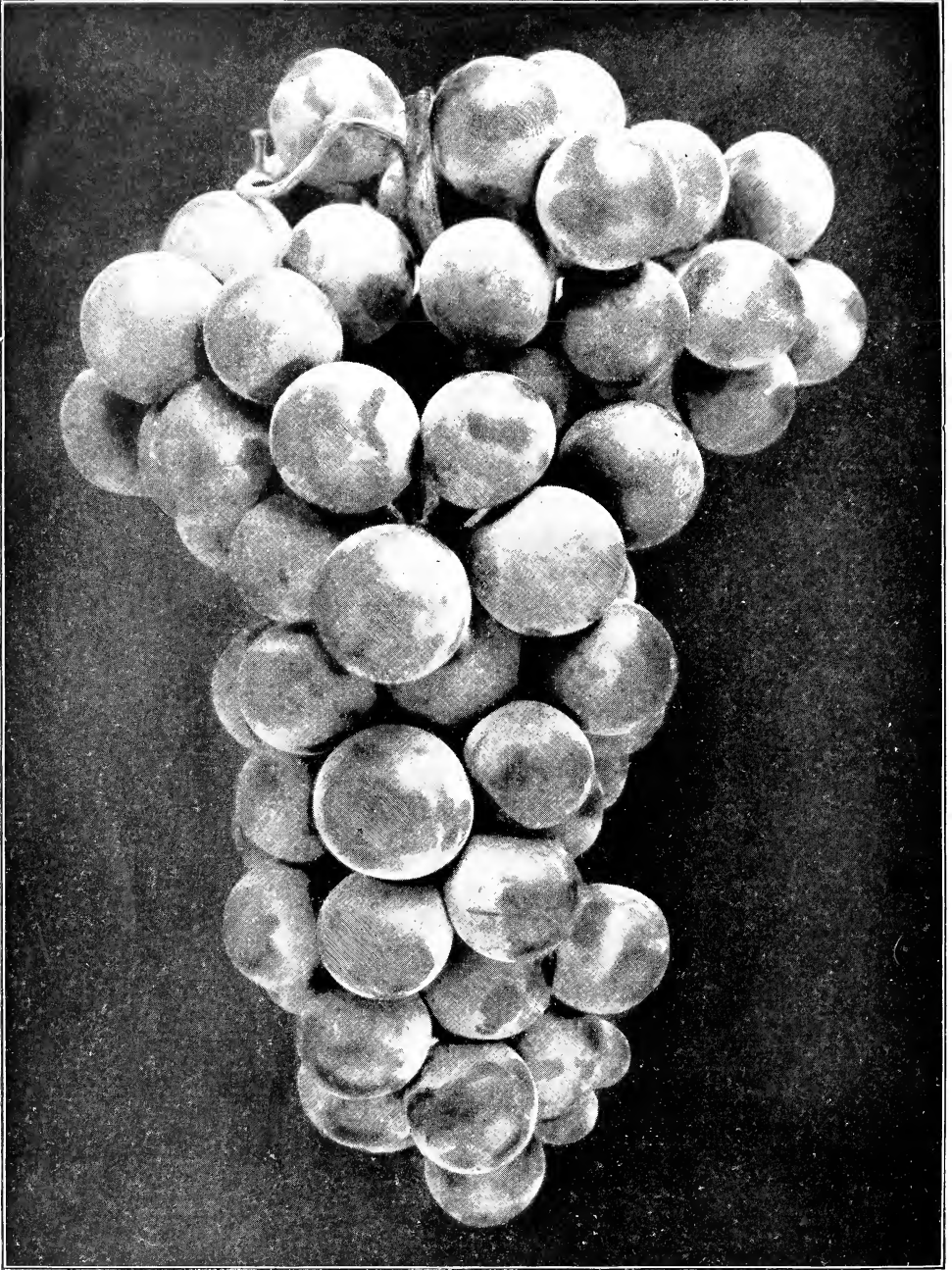
Eclipse. Black. Vigorous, hardy; produces fair crops; ripens before Hartford, quality only fair.

Esther. White. Bunch and berry large, early, of very good quality; vine only a fairly good grower.

Geneva. White. The bunches are medium to large, loose, berry large; pulp tender, sweet; skin thick, tough; a good keeper, of fine quality. Ripens about a week after Concord. Hardy.



Diamond Grapes (see page 11)



Pocklington Grapes (see page 19)

Grape Vine Specialists

Herbernont. Black. Bunch very large, shouldered, compact; berries small; ripens too late for the North, but is a valuable wine Grape in the South.

Hermann. Black. Bunch long, narrow; berries small, round, ripening very late. Vine vigorous, very productive. This is a seedling of Norton, and a valuable wine Grape in the Southern States.

Requa, Rog. 28. Red. Very similar to Lindley, but does not succeed so well.

In Praise of Our Grape-Vines

EL CENTRO, CAL.,
January 18, 1913.

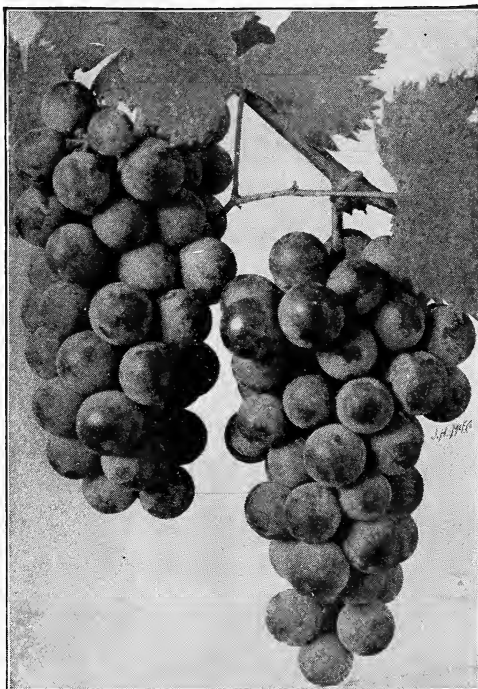
Gentlemen:—The Grape-vines you shipped December 18 arrived and were opened today. They came in fine condition and are entirely satisfactory. I anticipate great pleasure in selling them to my customers.

Respectfully,
WILLIAM KELLEY.

DEHAVAN, WIS.,
May 19, 1913.

Gentlemen:—You may be interested to know that the good goods you sold thirty-five years ago have brought you this order. I refer to your transaction with David Hent, whose granddaughter is my wife. He won good success with your Grape-vines.

Yours truly,
H. D. LATIMER.



Woodruff Red Grapes (see page 20)

Dear sirs:—Three years ago we purchased from you two vines each of fifty varieties of Grape-vines. Every one has proved true to name.

NEW BURNSIDE, ILL., January 16, 1913.
Yours truly,
W. J. CASPER.

Gentlemen:—The Grape-vines arrived all right and are well rooted. You keep up your reputation for growing well-rooted vines, as in the past.

MACON, GA., December 9, 1912.
Yours respectfully,
C. W. MORRILL.

Gentlemen:—We have bought of you for the past twenty years and you seem to improve with age. Your last shipment was as good, if not better than the first.

RALEIGH, N. C., March 11, 1913.
Yours truly,
WHITING BROS.

Gentlemen:—The 1,500 Grape-vines which we obtained from you last year made a splendid growth and not a single vine failed to grow.


TREVLAC, IND., January 28, 1913.
Respectfully,
BENJAMIN W. DOUGLASS.

My dear sir:—You sent me the finest lot of Grape-vines I ever bought and I have been buying trees and vines for many years.

MARTINSVILLE, VA., December 9, 1912.
Very truly yours,
W. M. PEYTON.



Small Fruits

 IN connection with our specialty, grape-vines, we grow also a large stock of small-fruit plants of such varieties as have been tried and found valuable for profit in field culture, or desirable for the garden. We do not aim to fill our lists with all the novelties annually introduced, many of which prove worthless or to be no improvement on existing varieties, but add yearly all such as stand the test of trial and comparison with older varieties and prove of sufficient merit to warrant us offering them to our customers. We are testing many varieties not named in this Catalogue, but which will be added when they have proved their claim to be worthy of general dissemination; we have tried to present only sorts of substantial merit.

Currants

Plant in rows 6 feet apart, and 4 feet apart in the rows; or, if to be cultivated both ways, 5 feet apart each way.

Before planting, the roots should be pruned as described for grape-vines, and, in planting, the same care should be taken to firm the earth about the roots.

After planting, cut back the tops about one-half the previous year's growth. In market plantations, the bush form of growing the plants is found most profitable. For the first five or six years after setting, a few inches of the new wood, or current year's growth, should be cut off each fall. If this is not done, the result will be a tall, barren stem with but few fruit-buds. No plant will better repay generous treatment and high cultivation than the Currant. Two or three forkfuls of good stable manure around each bush every fall is desirable. If this cannot be readily obtained, an experienced grower recommends the following special fertilizer:

Pure ground bone.....	600 pounds
Muriate of potash	250 "
Nitrate of soda	150 "

Apply the above, thoroughly mixed, to each acre every spring, sowing it broadcast and cultivating it in.

Red Currants

Cherry. Bush vigorous, stocky and compact. Clusters rather short, with short stems; fruit averages large; color fine, bright red; thin-skinned, juicy and fine-flavored. One of the most productive of the large Currants.

Fay (Fay's Prolific). Bush vigorous but not quite so strong a grower as Cherry. Clusters medium to long, with rather long stems; color darker than Cherry; berries average large; juicy and less acid than Cherry.

Grape & Vine Specialists

Long-bunched Holland. Bush very vigorous and hardy. Clusters long; berries medium to large; quality good. One of the best late varieties.

London Red (London Market). Bush vigorous, upright. Clusters short; fruit medium to large; color dark red, with sprightly acid flavor. Very productive.

Moore's Ruby. Bush upright, strong-growing. Clusters medium to large; berries above medium, juicy, sweet and good; clear ruby-color.

North Star. The bush is very vigorous, upright, somewhat spreading. Clusters medium length; berries vary from small to medium or above; dark red; comparatively mild acid. Hardy and productive.

Perfection. Bush vigorous, hardy and very productive. Berries larger than Cherry or Fay, with larger clusters; color bright red; rich, mild subacid; plenty of pulp with few seeds. It is a cross between Fay's Prolific and White Grape.

Ponoma. Very vigorous and hardy. Clusters medium length; berries medium size, clear, bright red, almost transparent, very sweet, of fine quality; ripens early and remains in good condition a long time.

Prince Albert. Bush vigorous, very upright in habit. Clusters short to medium; berries medium to large, pale red; skin thin; juicy, of high flavor. Immensely productive. A late variety, highly valued at canneries because of its good size, thin skin and large amount of highly flavored juice.

Red Cross. A strong-growing variety. Clusters long; berries medium to large, bright red; quality good to best. Very productive and hardy.

Red Dutch. An old and well-known standard variety. Bush a strong, tall, upright grower. Clusters average about 3 inches long; berries medium in size, dark red; sprightly subacid flavor. Productive.

Versailles (La Versailles). Bush a vigorous, somewhat spreading grower; similar to Cherry in habit of growth and character of fruit.

Victoria (Raby Castle). Bush a very strong, upright grower; foliage rather pale

bronze-green. Clusters above medium length; berries medium or above, bright red, with mild acid pulp. Very productive.

Wilder (President Wilder). Bush upright, vigorous. Clusters above medium length; berries averaging large; bright red; excellent, with a mild subacid flavor. Ripens early and remains bright and firm until very late. Because of its exceedingly vigorous growth, great productiveness, high quality, and remaining good so long after ripening, we recommend this as one of the best Red Currants. Is being very largely planted by the best fruit growers.



Perfection Currants



Wilder Currants
(see page 25)

White Currants

White Dutch. Bush an upright grower, vigorous and very productive. Clusters 2 to 3 inches long; berries of medium size, are translucent, and a little darker than White Grape; quality excellent. Ripens early. The plant is thoroughly hardy.

White Grape. Bush vigorous, somewhat spreading, productive. Clusters long; berries large to very large, averaging large; of very attractive color, mild flavor and good quality. A good table variety.

White Imperial. Bush vigorous and very productive. Clusters large; berries very large, sweet and most delicious. This is the best of the White Currants.

White Transparent. Large; bunches long; fine quality, milder than White Dutch or White Grape.

Black Currants

Black Champion. Bush vigorous and productive. Fruit averages above medium; pulp nearly sweet, mild-flavored. A desirable variety for general culture.

Black Naples. Bush very vigorous, upright, moderately productive. Fruit varies from small to large, averaging above medium; pulp acid, with strong flavor. An old and well-known variety.

Black Victoria. The bush is a strong, vigorous grower, and very productive. Fruit very large, of fine flavor. A new variety from England.

Boskoop Giant. Bush strong grower; productive. Fruit rich, sweet flavor, ripens evenly and hangs well on bushes for a long time after ripening in good condition; firm, pulpy flesh, making it well adapted to canning and shipping. The largest and best of all black varieties.

Lee's Prolific. The bush is rather short, dwarfish, moderately vigorous and productive; the fruit varies from small to very large; acid.

Prince of Wales. Bush vigorous and very productive. The fruit varies from small to large, is mild flavored and nearly sweet when fully ripe.

Buy the strongest roots you can procure, and you get not only quick results, but satisfaction as well.

Currants and Gooseberries make splendid jellies and preserves. They are not hard to grow, and fruit early.



Gooseberries

Plant in the same manner as described for currants, and give the same annual liberal application of manure or fertilizer. The American varieties will need close pruning every year; the English varieties need little or no pruning.

American

Chautauqua. Bush very vigorous, stout, upright; foliage large, glossy, dark green. Fruit large, smooth, veined, translucent; skin thick; quality very sweet and high-flavored. Hardy and productive.

Columbus. Bush a strong, robust grower; foliage large and glossy. Fruit large, oval; skin greenish yellow, smooth; of the highest quality.

Downing. Bush vigorous and very productive. Fruit medium to large; skin whitish green; flesh soft, juicy. Perfectly hardy under all conditions. Excellent for family use and very profitable for market.

Golden Prolific. Bush a good grower, hardy and productive. Fruit large, golden yellow; excellent.

Houghton. Bush a vigorous grower, with rather slender branches; very productive. Fruit medium size, pale red, tender and good. An old, reliable variety, which retains its popularity in spite of the new ones.

Pearl. Bush moderately vigorous; immensely productive. Fruit about the size of Downing, of fine quality.

Red Jacket (Josselyn). Bush vigorous, upright and productive. Fruit varies in size from medium to above medium. Color pale red. Resembles Houghton, but the fruit is larger.

Smith's (Smith's Improved). Bush moderately vigorous and exceedingly productive. Absolutely hardy under all conditions. Fruit large, pale greenish yellow, moderately firm and sweet; fine for table use.

Triumph. Bush a good grower, hardy and very productive. Fruit large, golden yellow; of good quality.

English

Crown Bob. Large, roundish oval, red, hairy, of fine quality.

Industry. The most successful of the English varieties. The bush is strong, upright, immensely productive. Berries of the largest size, dark red, of excellent quality.

Keepsake. Fruit very large, straw-colored, of excellent flavor. Very productive, and one of the earliest to ripen.

Lancashire Lad. Fruit smooth, bright red, very large, of fine quality. Bush a strong grower and productive.

Whitesmith. Large, roundish oval, yellowish white, nearly smooth, of first quality.



Columbus Gooseberries



Raspberries



✓ **RASPBERRIES** succeed well on any good land suitable for corn or wheat, but amply repay high cultivation. Well-rotted stable manure or ground bone are the best fertilizers.

Red and yellow varieties should be planted in rows 6 feet apart and 3 feet apart in the rows; black- and purple-cap varieties 7 feet apart and 3 feet in the rows. This will require about 2,400 plants to the acre for the former and 2,100 for the latter. Close planting is not advisable for any of the sorts.

Cut out all old wood as soon as the canes have done bearing—to give more vigor to the young canes. Blackcap varieties should be planted only in the spring.

Red

Cuthbert. Deep, rich crimson, large to very large, very firm. One of the very best market varieties. Season medium to late. A remarkably strong, hardy and productive variety.

Herbert. Bright red, large to very large, somewhat oblong, moderately firm, juicy, fine in flavor and quality. Very vigorous, hardy and productive. Originated in Ottawa, Canada.

Loudon. Dark crimson, large, firm, of good quality. The best midseason market variety. Vigorous, hardy and productive.

Marlboro. Light crimson, large, very firm, and of good quality. A fine early market variety; vigorous and productive.

Miller. Bright red, large, round, of fine quality. One of the firmest and best shippers for early market. Vigorous, hardy and immensely productive.

St. Regis. New Raspberry, said to fruit the same year planted. Everbearing, large size, firm, productive, good shipper, fine quality.

Black and Purple

Black Diamond. New. Large as Gregg. Ripens with Kansas. Hardy and productive; strong grower; highly recommended.

Columbian. Dull purple, very large, moderately firm. A good market berry and one of the best for canning. Bush remarkably strong and wonderfully productive.

Cumberland. Black. Very large; very similar to Gregg in quality and firmness; in hardiness and productiveness it is unexcelled. One of the best midseason market varieties, and very popular.

Gregg. Black. Has been for many years the leading market berry. Large, firm, of good quality, ripening late. Exceedingly productive.

Kansas. Black. Berries as large as Gregg and of better color; little bloom; of best quality; ripens early. The plant is a strong grower and productive.

Palmer. Black. Berries of medium size. Very early and productive.

Plum Farmer. New. Large, black. Hardy and productive; good quality. Strong grower, healthy, hardy. Best of the new sorts.

Yellow

Golden Queen. Large, golden yellow, of fine quality. Very hardy and productive; succeeds almost anywhere, and is a most desirable berry, bringing good prices in the market.

We are owners of the largest single tract of land in America planted exclusively to Grape-Vines, Currants and Gooseberries.



Blackberries

BLACKBERRIES require the same treatment as raspberries, and should be planted the same distance apart.



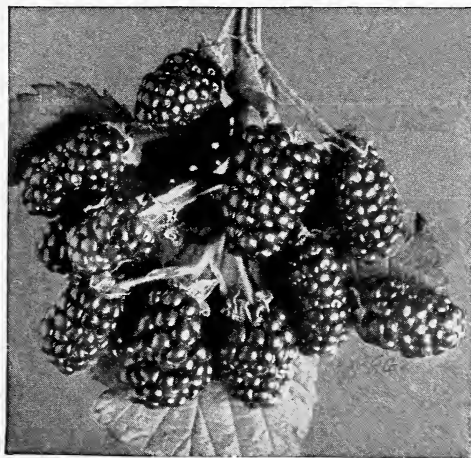
Agawam. Medium size, jet-black, sweet and tender to the core. One of the best for home use or home market. Very hardy, healthy and productive, and one of the most satisfactory varieties to grow.

Ancient Briton. Of medium size and best quality; immensely productive. Extremely hardy, enduring severe winters without injury. A reliable market variety.

Blowers. A new variety. Large, glossy, black; fine quality; quite acid, ripens early and continues a long time in season. The fruit resembles Wilson's Early in appearance.

Eldorado. Large, coal-black, sweet, melting, without hard core. Vigorous, hardy and very productive. Fine market variety.

Early Harvest. Medium; glossy black, of excellent quality; ripens very early and ships well; compact, dwarf grower. Very productive but not very hardy.



Snyder Blackberry

Erie. Very large, round, of fine quality when fully ripe; ripens a little later than Early Harvest. Vigorous and productive.

Iceberg. Originated by Luther Burbank, who has produced so many new fruits of world-wide fame and value. A snowy white Blackberry, as large as Lawton, early, sweet, tender, and melting throughout. Very productive but not very hardy. Canes should be laid down and covered during the winter, in the Northern States for best results.

Kittatinny. Large, long, glossy black of most excellent quality and fine flavor. A popular variety, but requires protection in severe climates.

Mersereau. Medium to large, juicy, mildly sweet when fully ripe, sprightly, good flavor and quality. The bush is vigorous, hardy and productive.

Minnewaski. Large, roundish to slightly elongated, sweet and juicy when fully ripe fine flavor and quality. Canes vigorous, quite hardy and productive.

Rathbun. Very large, jet-black, firm enough to ship and handle well, of best quality. Forms a compact bush 4 to 5 feet high. Very productive and hardy; will root from tips of canes.

Stone's Hardy. Medium size, juicy, sweet, of fine flavor and good quality. Canes upright, rather slender. The bush is very hardy and productive.

Snyder. Of medium size and fair quality when well ripened. The most popular Blackberry in this state. Ripens early; is very productive and very hardy and always brings good prices in market.

Taylor. Very hardy, as productive as Snyder; the long, thimble-like fruit is borne in immense clusters of the very best quality and flavor. Ripens about two weeks later than Snyder.



Eldorado Blackberry (see page 29)

Wachusett. Medium size, roundish, juicy, sweet, good flavor and quality. Canes very hardy, moderately vigorous, with small, scattering prickles.

Ward. Large, long, jet-black, tender, melting, without core, best quality. A new variety with strong, sturdy canes. The plant is absolutely hardy, withstanding without injury the severest winters, vigorous in growth and bearing annually very heavy crops of its splendid berries.

Wilson. Large, very early, sweet and delicious; ripens evenly and holds its color well. A strong grower and very productive, but requires winter protection.

DEWBERRY

Lucretia. A low-growing, trailing blackberry. Large; soft, sweet, of very good quality, with no hard core. The plant is quite hardy and, under favorable conditions, very productive. Earlier than the upright varieties.

The Grape-Vines we offer are the best rooted and most vigorous that can be grown, and come into fruiting in the shortest time possible after planting.



Strawberries



STRAWBERRIES do well on almost any soil, provided it is well drained, deeply worked and well manured. Thoroughly rotted stable manure is the ideal fertilizer, but, where this is not available, nitrate of soda, dried blood, bone meal, muriate of potash, kainit and wood ashes are all excellent. For field culture set in rows 3 to 4 feet apart, and 15 to 18 inches apart in the rows; in the garden the rows may be nearer together. Early spring is the best time for setting plants.

Varieties with imperfect or pistillate flowers are marked "P," those with perfect or staminate flowers are marked "S." Where pistillate varieties are planted, every third or fourth row should be of some staminate variety that blossoms at the same time, in order to produce plenty of pollen to fertilize the imperfect flowers of the pistillate varieties.

Bubach. (P.) Large, early, remaining good a long time; color bright scarlet; productive; largely grown for market.

Brandywine. (S.) Large, midseason to late, of excellent quality, dark glossy red; vigorous and productive.

Clyde. (S.) Large, firm, of regular, conical shape; light scarlet. Early to midseason; healthy and very productive.

Dunlap. (S.) Vigorous, productive; good flavor; good canner and fine shipper. Ripens midseason.

Excelsior. (S.) Very early, of good size, cone-shaped; bright scarlet. Ripens evenly.

Gandy. (S.) Large, late, firm, bright crimson; very uniform in size and shape. Vigorous and productive.

Glen Mary. (S.) Large to very large, often flattened, deep red, of unusually good quality; season medium to late. Very productive and vigorous.

Haverland. (P.) Medium to large, long, conical, of fair quality; rather soft, but a popular market berry.

Jessie. (S.) Large, dark red; very popular where it succeeds. An excellent fertilizer for Bubach and other early-blooming kinds.

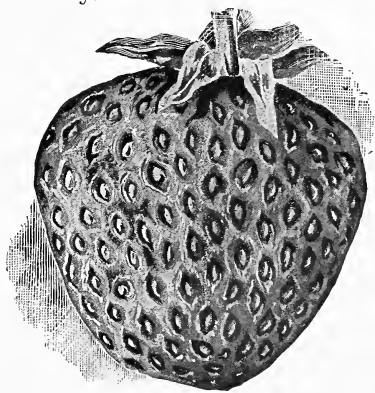
Michel's Early. (S.) Medium size; similar to Crescent, but some days earlier and firmer.

Nick Ohmer. (S.) Very large, dark red, uniformly roundish conical, of excellent quality; very healthy, vigorous and productive.

Parsons' Beauty. (S.) Very large, of high quality, deep red; midseason. Hardy and vigorous.

Sample. (P.) Large to very large; deep glossy red, firm flesh, fine quality; very productive. Midseason to late.

William Belt. (S.) Large to very large, conical, bright scarlet, firm, of good quality; very vigorous, healthy and productive. A fine market berry.



Sample Strawberry



One of our Grape Vineyards

Suggestions to Planters

LOCATION AND EXPOSURE FOR VINEYARDS



THE best location for a vineyard is on soil naturally dry or artificially drained.

Grape-vines thrive best on either gravelly, sandy or clay soils, or a combination of these. They succeed best on high, dry ground, having enough slope to carry off all surplus water. In northern latitudes, away from large bodies of fresh water, an eastern or southern exposure is preferable. Near a large river or lake, an exposure facing the water is usually most desirable.

A location giving a free circulation of air is very desirable, as in such locations there is less liability to mildew of foliage or rotting of the fruit,—to both of which diseases many varieties of grapes are subject.

Where the formation of the land will permit, it is best to plant the rows so that they will be parallel with the direction of the prevailing winds of summer and autumn, as this will permit the wind to blow unobstructedly between the rows, rather than against them.

PREPARATION OF SOIL

The only necessary preparation of the soil is to thoroughly plow and pulverize it to a depth of 10 to 12 inches. If in sod, it should be summer-fallowed in August or September preceding planting, and again plowed at the time of planting. At this last plowing many of our best vineyardists plow the ground into lands equal in width to



the distance apart the rows are to be planted, and plant the vines in the dead furrows. This saves a large amount of labor in digging the holes.

If the soil is naturally poor, give a liberal application of thoroughly rotted stable manure, or raw bone meal, about 600 pounds to the acre, with about 300 pounds muriate of potash, or two tons of good, unleached hard-wood ashes. Some planters put manure or fertilizer in the hole when planting, which is recommended, and helps the vines to make a strong, vigorous growth.

PLANTING

When the land has thus been thoroughly prepared and is ready to plant, stake out the ground in rows 8 feet apart, and 6 to 8 or 10 feet in the rows. The strong-growing varieties should be given more space than is necessary for the weaker-growing kinds.

Dig the holes 12 to 15 inches wide and 15 inches deep, loosening the earth thoroughly in the bottom and throwing in 2 or 3 inches of surface soil.

When the land has been plowed in the manner indicated above, and the planting is done in the dead furrows, much less labor is required in digging the holes. All that is necessary is to remove the subsoil and fill in 2 or 3 inches of surface soil. Before planting, the tops should be cut back to within two or three buds of the previous year's growth, and the roots to 6 to 8 inches in length, being kept constantly moist. Spread the roots horizontally in the bottom of the hole, in as nearly a natural position as possible. Cover with good, fine, surface soil 2 or 3 inches deep, then step into the hole and firm the earth thoroughly. Now put on your fertilizer, and then fill the hole full, treading it the second time, and finish with sufficient earth to cover the vine, so that only one or two buds will be above the surface. The last filling should not be trodden, but be left loose, to act as mulch. This firming or treading the soil is very essential to success, and should never be neglected. When planted in dead furrows, most of the filling can be done with a plow, turning a back furrow against the vines, at the same time filling the dead furrow; but the treading and firming should be done as above.

If the tops of the vines are below the general surface of the ground, the hole may remain partly unfilled in the shape of a basin, to be filled in as growth progresses.



Grape Roots



Deep planting is recommended both for the North and South, as it insures a tier of roots so far below the surface that there is little danger of injury by freezing in the North, or of burning or scalding when the soil becomes very hot on the surface, as it sometimes does in the South.

If the vines are to be trained to stakes instead of a trellis, as is sometimes done in the South, they may be planted 6 feet apart each way; but the planting should be performed in the method described above, except that if a plow be used the furrows may be opened at right angles to each other, and the vines planted at the intersections. In garden or amateur planting, the method of digging the holes and firming the soil about the roots, as described above, should always be followed.

CULTIVATION

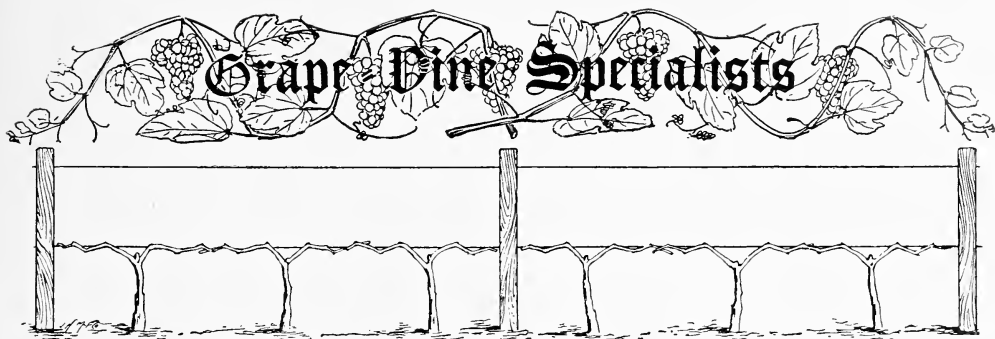
During the first summer after planting, cultivate the soil thoroughly and hoe frequently about the vines, allowing no weeds to grow. Stirring the ground frequently, especially in dry weather, acts as a stimulant to growth, the finely pulverized soil forming the best kind of mulch. Peas, beans, early potatoes or other small crops may be grown between the rows the first year. It is not necessary or advisable to tie up the young canes the first summer; let them lie on the ground. In the fall, after the foliage has fallen, cut the new growth back to two or three eyes, after which plow between the rows, turning the furrows together over the rows, and if in the North, where there is danger of injury by freezing, make a small mound of earth over each vine, first placing a small stake near it, so that it may easily be found and uncovered in the spring. By this simple method surface drainage is effected, and the roots and tops thoroughly protected during the winter.

In the spring, as soon as the frost is out of the ground, remove the earth over the canes, and, when the new shoots are 2 or 3 inches long, rub off all but the two strongest, which should be left to form canes, to be tied to the trellis the following spring. If to be trained to stakes, but one cane should be left. Cultivation the second summer should be the same as the first. As growth progresses, the canes may be trained along the rows on the ground, or, if the trellis is put up, they may be tied to the wires.

CONSTRUCTION OF TRELLIS

The trellis may be put up early in the spring of the second year, though it is not necessary until the third year after planting. Some vineyardists set the posts and put on the lower wire the second spring, tying the canes to it as they grow large enough during the summer; but this is not essential.

Posts should be 8 to 9 feet long; the end posts about 5 to 6 inches in diameter at the small end, and the intermediate posts or stakes 3 to 5 inches. Holes about $3\frac{1}{2}$ feet



Trellis and vines tied to lower wire second season after planting

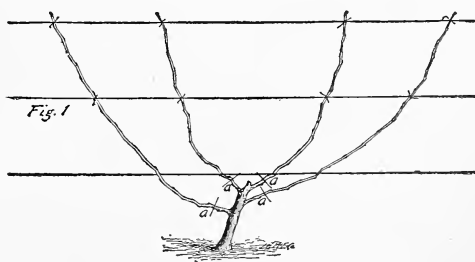
deep should be dug for the end posts, and the posts carefully set with a slight inclination outward from the row. The intermediate posts should be from 24 to 30 feet apart, according to the distance apart of the vines, allowing three vines between each two posts, and may be set in holes, or the lower ends may be sharpened and driven into holes made with a large iron bar. If the end posts are large enough, no bracing is necessary; but, if braces are needed, they may be made of 3 x 4 or 4 x 4 scantling, 12 feet long, one end resting in a notch near the top of the post, the other against a stout stake driven firmly into the ground in a line with the row. The lower end of the brace should rest on a flat stone, to keep it off the ground and prevent rotting.

The lower wire should be $2\frac{1}{2}$ feet from the ground, the upper wire 5 feet. In putting up the wires, they should be fastened to the end posts by winding them twice around, and twisting the end around the horizontal wire, and to the intermediate posts by $1\frac{1}{2}$ -inch staples. The wires should be straightened, but not drawn very tight, as there will be less danger of breaking or pulling out of posts by contraction. The materials required for one acre of vines are about 180 posts and 8 stakes (use the largest ones for end posts), 500 pounds of No. 9 wire, 3 pounds of $1\frac{1}{2}$ -inch staples for fastening wires.

PRUNING AND TRAINING

THE RENEWAL SYSTEM. There are several good systems of pruning and training, each of which has its merits and advocates. A simple method, largely practised in western New York and Ohio, is known as the renewal system. It consists simply in cutting out nearly all the old bearing wood every fall to within 2 or 3 inches of the crown, leaving on strong vines three or four canes of the current year's growth, which have grown from spurs left for the purpose at the previous year's pruning. Cut each of these canes back to 3 or 4 feet in length, tying them fan-shaped to the wires the following spring, as shown in Fig. 1.

The letters *a a a a* show where the old canes are cut off. The strongest canes





growing from these spurs should be tied to the trellis during the summer, and all weak and useless shoots rubbed off. Suckers starting below the crown or from old wood do not make good bearing canes and should not be used.

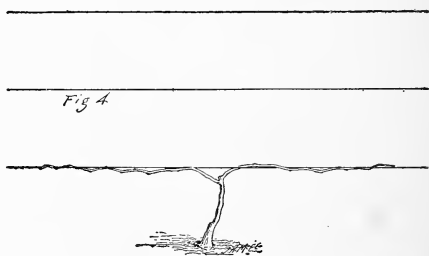
THE HORIZONTAL ARM SYSTEM is also largely used, and is thus described:

When the vine is set out, it should be cut back to two or three eyes, as in Fig. 2.



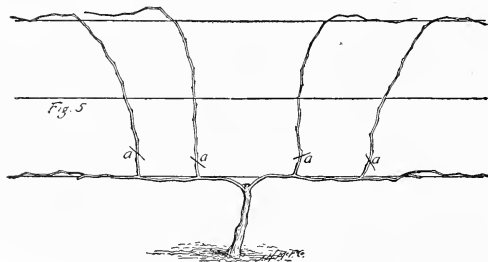
But one cane should be allowed to grow the first season; this may be tied to a stake or allowed to run on the ground. In the fall it should be cut back to 3 feet in length, as in Fig. 3. In the spring tie the top of this cane to the lower wire of the trellis, allowing only the two upper buds to grow, and rubbing off all other eyes that start. Then two canes may be allowed to run on the lower wire, or tied to the upper wires if they have been put on the posts. In the fall cut these arms back to about 3 feet each, tying them the following spring to the lower wire, as in Fig. 4. When the shoots get well started in the spring, rub off all on the under side and save only three of the upper ones on each arm, leaving them 10 to 12 inches apart. As these grow, train the two end shoots to the lower wire to complete the arms, and let the others grow over the wires, as in Fig. 5. In the fall cut these canes back at the cross-marks in Fig. 5.

The vine is now properly formed and the method of pruning is very simple and easy, being the same year after year, a new cane being grown each summer from the spur at *a* to replace the bearing cane which is to be cut off in the fall. If the vines have not made a strong growth the first year, they should be cut back and treated the second year the same as the first.



THE KNIFFIN SYSTEM.—Another method,

known as the Kniffin System, requires but two wires. A single cane is grown to the upper wire. All buds are broken from this except four, just two below each wire. As these grow, they are fastened to the wire, one in each direction, forming four arms, as in Fig. 6. In the fall these arms are cut back to four to eight buds. In the spring these arms are firmly tied to the wire, and the growth from each bud allowed to hang down, as in Fig. 7. Future pruning consists in simply cutting back these canes to within one or two buds of the main arms, as shown by the cross marks in Fig. 7.

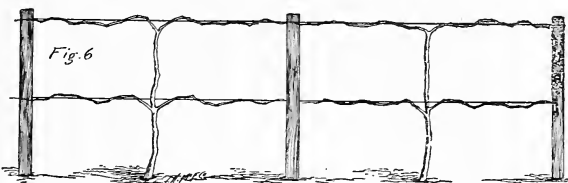


There are many modifications of this system. In the Trunk System two canes

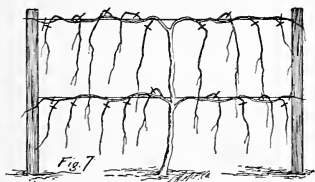
Grape Vine Specialists

are grown, one to the lower, the other to the upper wire, and the same method of training and pruning is followed as above.

THE UMBRELLA SYSTEM, where the main cane is tied to each wire, and two arms with ten to fifteen buds each grown at the upper wire, and none at the lower. These arms are tied near their base to the upper wire, then dropped over and the ends tied to the lower wire, the arms extending about halfway between this and the next vine on each side. These arms are pruned each year the same as in Fig. 7.



THE OVERHEAD OR ARBOR SYSTEM is formed by spiking cross-bars 3 feet long to the tops of the posts 6 feet high. Three wires are fastened equidistant on these cross-bars and stretched the length of the rows. The trunk cane is grown without branches to the center wire, and six arms are trained, one in each direction on each wire.

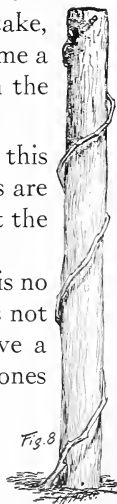


THE POST OR STAKE SYSTEM.—In the South the Post or Stake System is very popular. A post or stake is set firmly in the ground at each vine. The cane-renewal system of pruning, as described at Fig. 1, is used. Only one cane is allowed to grow each year. A cane of the previous year's growth is wound tightly from right to left around the stake, the upper end being fastened with a wire nail or some other means, near the top of the stake, as in Fig. 8. This forms the bearing cane for the year, and at the same time a new cane is allowed to grow at will from the spur near the ground, to form the bearing cane for the following year.

SIMPLE METHOD OF GRAPE-TRAINING.—So much has been written on this subject and so many complicated methods set forth that the essential points are lost sight of, and those who cannot follow these methods to the letter just let the vineyard go without care.

Proper pruning is the most important item in Grape culture and there is no tree or vine which may be handled so systematically as the Grape. It is not enough to cut away half or two-thirds of the growth, for unless you have a proper knowledge of the fruit-bearing canes, you may cut away the very ones you ought to leave.

In the first place let us understand that some of the canes will produce fruit-buds next year, while others will only make more wood, and it is necessary to pay very close attention to this point.





It is not at all difficult to determine between the two. The fruit-canes have the buds close together, and these buds are short and plump. Such canes usually come from wood of the previous season's growth, while the long-jointed and unfruitful canes come from older wood.

Let us remember, however, that these long-jointed canes in their turn produce fruit-bearing canes next year, and one or two bud-spurs should be left on them, for the vineyardist must look a year ahead.

The time for pruning Grape-vines is any time from the falling of the leaves in the fall till the sap rises in the spring.

FRUITING

The second year, no fruit should remain on the vines. The third year, strong vines with good culture ought to produce three to four pounds each; the following year they should produce a good crop. But vines of weaker growth will not do this. Care must be taken not to allow the vines to overbear, or they may be so injured as never to recover. Three or four tons per acre is a full average crop for the strongest growers, although good vineyards often produce without injury five or six tons per acre. The less the number of clusters this weight can be put into, the more satisfactory will be the money return from the crop. Hence it is well to thin the fruit, picking off the smallest and poorest clusters.

There is always a demand for strictly fine fruit at good prices.

We do not advise summer pruning further than pinching off or rubbing out weak and useless laterals and shoots. Leaves are the laboratories of the growing vines; in them is perfected the food which produces the growth of both wood and fruit. Severe summer pruning, removing a large amount of foliage, weakens the vine, reduces the size of the fruit, retards its ripening, and checks the growth of the root. Where more than one shoot starts from a bud, it is well to rub off the weaker one before it is more than 2 to 6 inches long. When particularly fine clusters are desired, the ends of the canes may be pinched off and stopped when growth has progressed to four or five leaves from the last cluster, and thereafter the ends of all laterals pinched off as soon as one or two leaves are formed. Superfluous suckers that start below the crown of the vine should be broken out before much growth has taken place.

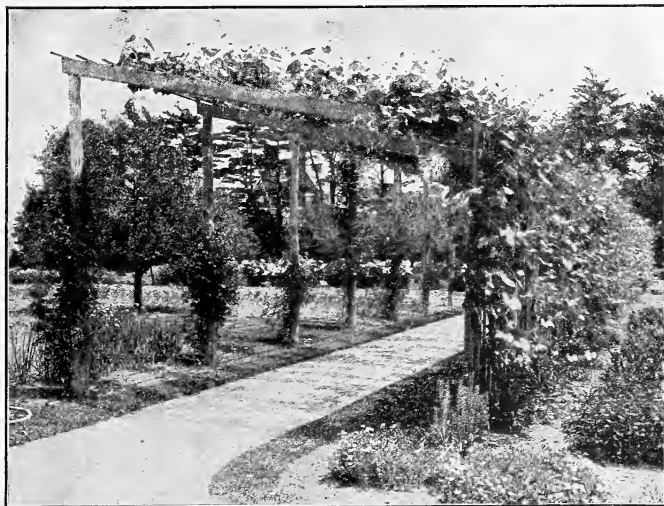
GARDEN OR AMATEUR PLANTING

What we have said in reference to vineyard planting and cultivation is equally applicable to garden cultivation, except that the pruning and training may take any form which suits the fancy or necessity of the planter. Vines will do well trained to stakes or fences, on walls, trees, sides of buildings or arbors.



CITY AND SUBURBAN HOME GROUNDS

may be greatly improved at small expense by planting a few Grape-vines around the



An inexpensive but attractive Grape-arbor

house and yard. The foliage adds beauty and grace to the surroundings, while fresh Grapes will supply the table. Prune thoroughly each year, so as to preserve an equilibrium between root and top, or the vines will overbear. In other words, no more bearing canes should be left than the roots can sustain in a vigorous growth of new shoots. Grapes are easily grown and should be in every garden.

Collections

We recommend the following collections for the home garden, and have selected varieties that succeed well generally and ripen from early until late.

Collection No. 1. Cost \$1.25

12 Grape-Vines, all different kinds. BLACK—Concord, Campbell's Early, Moore's Early, Worden. RED—Agawam, Brighton, Delaware, Catawba. WHITE—Diamond, Niagara, Pocklington.

Six vines, your selection of varieties, for 75 cts.

Collection No. 2. Cost \$2.50

12 Grape-Vines, same as above. 6 Currants, two each Fay's, President Wilder, White Grape. 6 Gooseberries, two each Downing, Red Jacket, Houghton.

Will furnish one half of Collection No. 2 for \$1.50

Collection No. 3. Cost \$5

24 Grape-Vines—3 Concord, 2 Green Mountain, 2 Brighton, 2 Agawam, 3 Niagara, 2 Moore's Early, 2 Delaware, 1 Campbell's, 2 Moyer, 2 Worden, 2 Catawba, 1 Pocklington.

12 Currants—3 Fay's, 3 Perfection, 3 Black Champion, 3 White Grape.

6 Gooseberries—2 Downing, 2 Houghton, 2 Red Jacket.

12 Blackberries—6 Eldorado, 6 Snyder.

12 Black Raspberries.—6 Kansas, 6 Plum Farmer.

12 Red Raspberries—6 Cuthbert, 6 St. Regis.

6 Yellow Raspberries—Golden Queen.

Will furnish one half of Collection No. 3 for \$3

The vines we furnish in the above collections are not small vines, but are the strongest and best-rooted that can be grown, and they will come into fruiting in the shortest time possible after planting.

Prices on other kinds described in this Catalogue will be found in Price-List enclosed.



AWARDS

It has not been our custom to enter large exhibits in competition for prizes at the national and state exhibitions, yet we have been awarded

The Wilder Silver Medal by the *American Pomological Society*, for the “largest and best collection of native Grapes,” at Boston, Massachusetts, 1881.

Silver Medal by the *American Horticultural Society*, at St. Louis, Missouri, 1882, for the “largest and best collection of native Grapes”—where we exhibited 135 varieties.

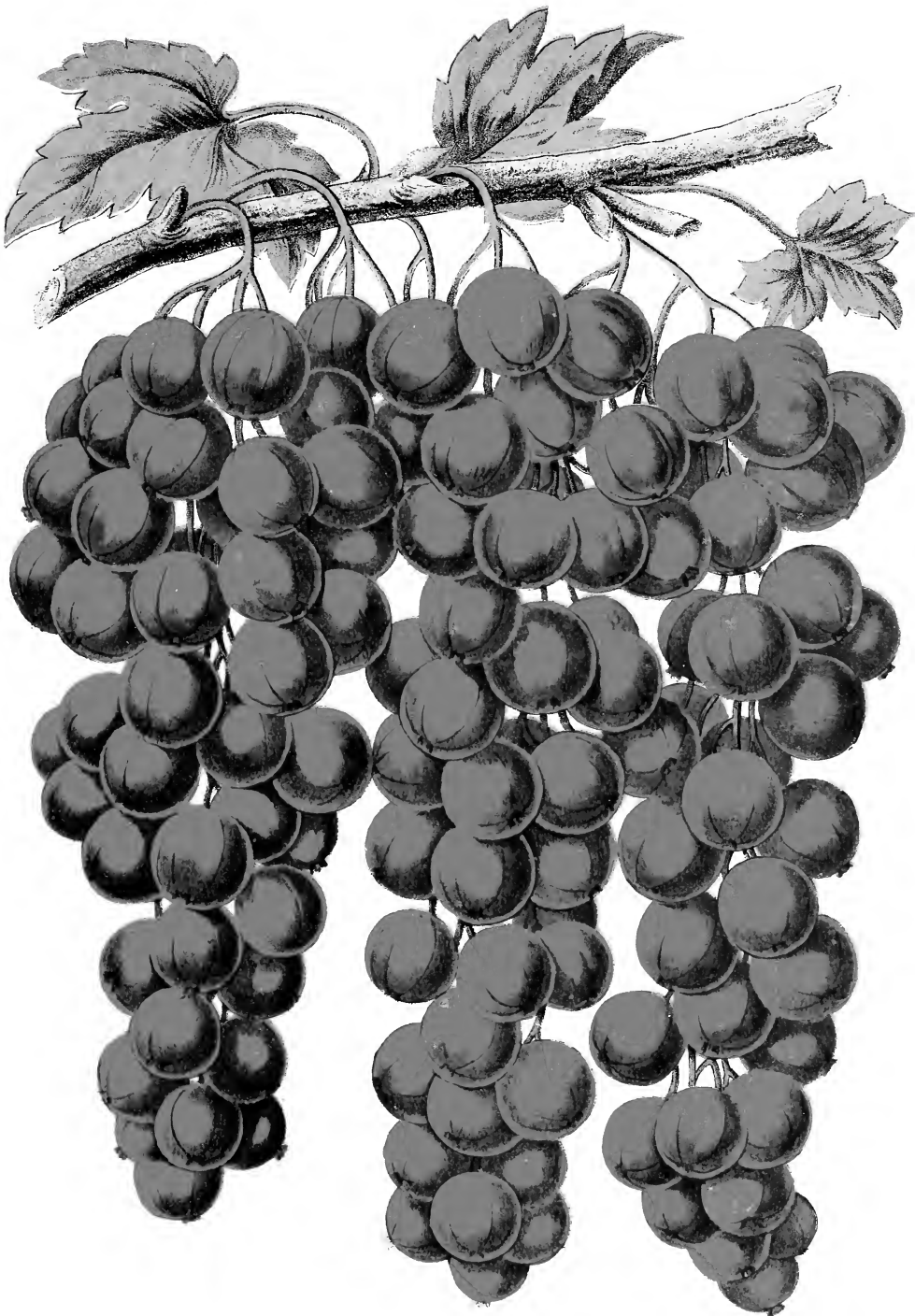
Wilder Medal and First Prize in Money by the *American Pomological Society*, at Boston, Massachusetts, 1887, for the “largest and best collection of Grapes”—where we exhibited 165 varieties, the largest number ever entered by one exhibitor.

Silver Medal by the *Pan-American Exposition*, at Buffalo, New York, 1901, where we exhibited a large collection of the leading varieties.

Silver Medal by the *Louisiana Purchase Exposition*, at St. Louis, Mo., 1904.

Gold Medal by the *Massachusetts Horticultural Society*, Oct. 10, 1907.





THE WONDERFUL NEW CURRANT
FAY'S PROLIFIC.

IT HAS NO EQUAL.

MENSING & STECHER, LITH. ROCHESTER, N.Y.

Spraying Calendar

The necessity of spraying is acknowledged by all authorities as being one of the requirements of successful fruit-growing. Spraying not only insures better fruit, but more of it, greatly increasing its quality and value.

GRAPE-VINES (Fungous diseases; flea-beetle)

First application.—In spring when buds swell, copper sulphate solution. *Paris green for flea-beetle.*

Second application.—When leaves are 1 to 1½ inches in diameter, *bordeaux*. *Paris green for larvæ of flea-beetle.*

Third application.—When flowers have fallen, *bordeaux*. *Paris green as before.*

Fourth application.—Ten to 14 days later, *bordeaux*.

CURRENT (Mildew, worms)

First application.—At first sight of worms, *arsenites*.

Second application.—Ten days later, *hellebore*. *If leaves mildew, bordeaux.*

Third application.—If worms persist, *hellebore*.

GOOSEBERRY (Mildew, worms)

First application.—When leaves expand, *bordeaux*. For worms, as above.

Second application.—Ten to 14 days later, *bordeaux*. For worms, as above.

RASPBERRY, BLACKBERRY, DEWBERRY (Anthracnose, rust)

First application.—Before buds break, copper sulphate solution. Cut out badly diseased canes.

Second application.—During summer, if rust appears on leaves, *bordeaux*.

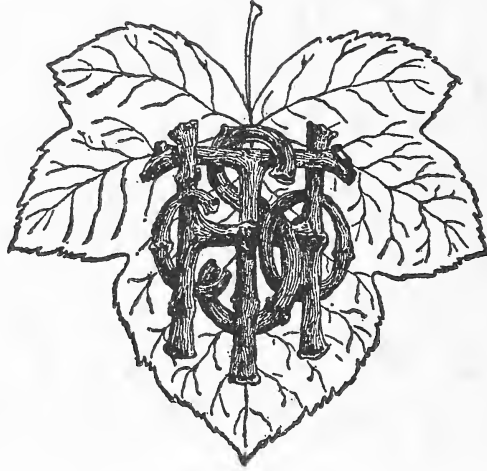
Third application.—Repeat second, if necessary. (*Orange or red rust is treated best by destroying entirely the affected plants.*)

STRAWBERRY (rust)

First application.—As first fruits are setting, *bordeaux*.

Second application.—After last fruits are harvested, *bordeaux*.

Spray materials are now sold by all leading seedsmen, drug and hardware stores, and are put up in concentrated form with full directions for use.



T. S. HUBBARD COMPANY
GRAPE-VINE SPECIALISTS
FREDONIA • NEW YORK